

Compact Multi-Protocol Modem, Phase I

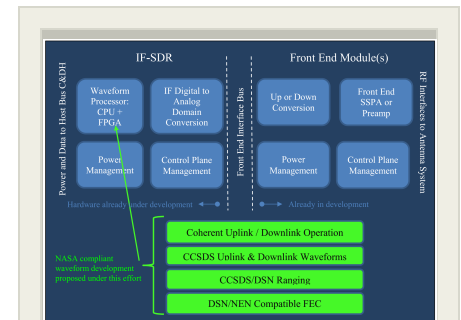
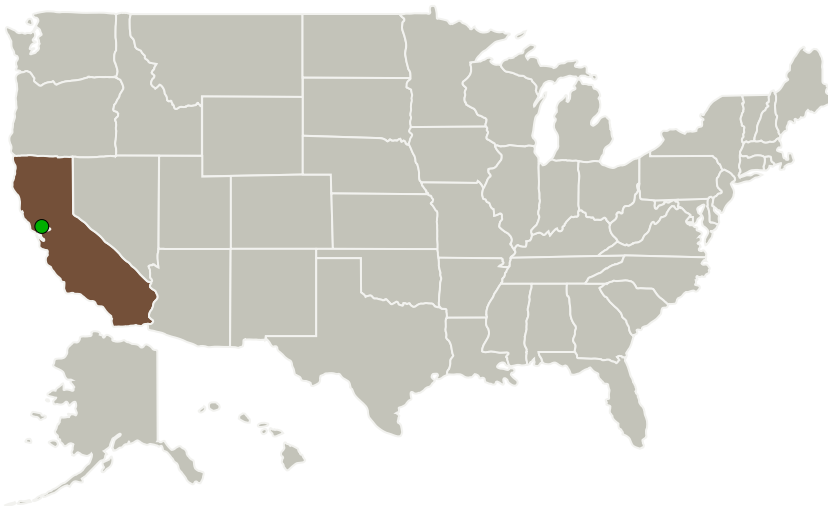
Completed Technology Project (2017 - 2017)



Project Introduction

At present, CubeSat and many SmallSat radios are not compatible with CCSDS waveforms - these are the dominant waveforms used by NASA ground stations and international partners. Furthermore, none of the current CubeSat radios have ranging capabilities. With CubeSats being considered for a wide range of missions outside the realm of LEO (Low Earth Orbit) - compatibility with CCSDS waveforms is ultra-important and ranging capability is critical. Innoflight proposes to adopt CCSDS waveform and ranging capabilities that are compatible with NASA's NEN (Near Earth Network), DSN (Deep Space Network), and SN (Space Network) into the single-board CubeSat form factor IF-SDR platform. In addition to waveform adoption - we propose to design on the fly re-configurability of waveforms to support switching between different ground stations and different mission phases. At the end of the Phase II, we will commercialize the most flexible and capable CubeSat radio on the market.

Primary U.S. Work Locations and Key Partners



Compact Multi-Protocol Modem, Phase I Briefing Chart Image

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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Innoflight, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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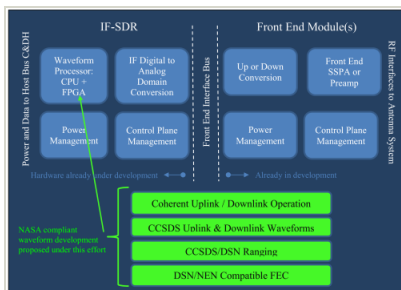
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Organizations Performing Work	Role	Type	Location
Innoflight, Inc.	Lead Organization	Industry Veteran-Owned Small Business (VOSB)	San Diego, California
● Ames Research Center(ARC)	Supporting Organization	NASA Center	Moffett Field, California

Primary U.S. Work Locations

California

Images



Briefing Chart Image

Compact Multi-Protocol Modem,
Phase I Briefing Chart Image
(<https://techport.nasa.gov/image/134335>)

Project Management

Program Director:

Jason L Kessler

Program Manager:

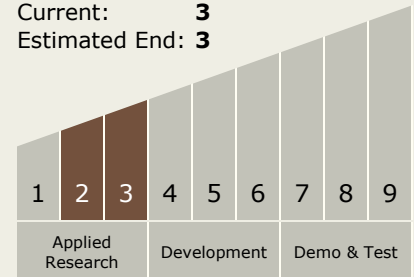
Carlos Torrez

Principal Investigator:

Assi Friedman

Technology Maturity (TRL)

Start: 2
Current: 3
Estimated End: 3



Technology Areas

Primary:

- TX05 Communications, Navigation, and Orbital Debris Tracking and Characterization Systems
 - TX05.2 Radio Frequency
 - TX05.2.4 Flight and Ground Systems